

WHITE-PETALLED *DROSERA MICROPHYLLA* ENDL. FROM NEAR
ESPERANCE, WESTERN AUSTRALIA

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In the coastal granite hills near Esperance (33°49'S, 121°52'E), Western Australia grows a variant of *Drosera microphylla* Endl. that has white petalled flowers and orbicular leaves, and thus differs from the typical form of the species. In this paper this variant is described and compared with published descriptions.

The coast near Esperance is dominated by three different types of environment: coastal sand dunes composed of either quartz sand or carbonate sand of biogenic origin; a subdued low plateau with laterite weathering products; and low, often rounded granite hills that rise above the landscape. Each type of landscape supports a suite of carnivorous plant species, but for now we focus on the granite hills. Whilst the hills are modest by any standard, they occur at or very close to the coast and form enough of a physical barrier to deflect on-shore winds and generate more cloud and rain than other parts of the coast, even if only slightly so. Water runs quickly down the bare granite slopes and is gradually channelled into the headwaters of numerous small intermittent streams. On the edge of bare granite slopes soil formation is minimal. The thin soil is often covered by moss, and a selection of drought-deciduous forbs and annual herbs. It is in this environment that this taxon of *D. microphylla* occurs, and often does so in great abundance (see Back Cover).

The soil dries out quickly in late spring, and the tubers¹ of this sundew are nestled snugly at least 10 cm deep in the soil, where possible, or nestled into any available clefts in the granite surface where the soil is thinner. In autumn the weather cools and the incidence of rainfall increases. Growth commences from the tubers and by mid to late autumn growth emerges at the soil surface. Juvenile plants form a rosette of spatulate leaves but larger plants bypass this stage and immediately begin to form an erect stem with orbicular cauline leaves. A conspicuous characteristic of the taxon is the vibrant red colouration of the leaves and stem, which is made all the more eye-catching by the density at which these plants grow together.

The plants grow throughout the winter and into mid-spring when a surprisingly small number of plants begin to form a terminal inflorescence. I have observed plants of this taxon flowering in October and November in the wild. The sepals are large, smooth and have a metallic lustre, which is typical of this species. The petals are white with an often variable amount of red pigment on the outside base of the petals; at the flower's maturity, this colouration results in a bulls' eye feature that may assist in attracting pollinators (Figure 1).

In late spring to early summer the soil begins to dry out, and the plants senesce and become dormant. The timing of dormancy is variable, and appears to at least partially correlate with soil depth—plants in thin soil senesce before those in deeper or more sheltered soil. This can be seen where plants on the edge of a mossy soil area are dormant whereas those in the deeper soil near the middle are still alive.

¹As the storage and resting organs in subgenus *Ergaleium* are covered by a leaf-derived, readily detachable envelope, they must not be called tubers (in which the adnate skin is not derived from leaves and detachable only by force or after cooking) but are instead what the botanist technically calls corms, cf. the analogous situation in *Crocus* or *Gladiolus*.—ed. (JS)



Figure 1. Detail of an open flower. The red pigment on the outside base of the petal is transmitted through to the inner centre, giving it a dark pink tinge.

Following the format in Marchant and George (1982) this taxon is described as:

Herb with a tuber. Stem erect, 5 to 18 cm tall, glabrous, weakly flexuous, with several bract-like prophylls, 3 to 6 mm long at the base. Leaves alternate, rarely with secondary leaves in the upper axils; lamina orbicular, deeply cupped, 3 mm diameter, peltate, on petiole 8 to 20 mm long. Inflorescence a small panicle, 1 to 5-flowered; pedicels 5 to 30 mm long. Sepals 5, narrowly obovate, apex obtuse, deeply concave 7 to 10 mm long, denticulate, glabrous, iridescent, olive green. Petals 5, obovate, 8 mm long, 7 mm wide, unscented (to the human nose), white with the abaxial surface of the petal base often deep red. Ovary, 1, three-locular, red, ovoid, glabrous, 1.2 mm diameter and 0.8 mm long. Styles 3, 2 mm long, flattened, multiply divided into many terete segments forming a low dome over the ovary. The basal third of the styles are red, with the remainder, including the stigmas, white. Stamens, 5, erect, 4 mm long. Filaments 3 mm long by 0.6 mm wide, pale pink, flattened in cross-section. Anthers, 5, 0.8 mm long, pollen yellow. Bracteoles spatulate, 1 to 2 mm long, olive green to red, glabrous, with entire margins; the apex is often cupped. Seeds oblong, dark grey, flattened, reticulate surface, to 1.8 mm (including membranous apical ends) long by 0.3 mm wide by 0.2 mm thick, the ends extending into often-flexuous wings to 0.6 mm long (Figure 2).

Drosera microphylla is known to be a polymorphic species (Diels, 1906: 121; Lowrie, 1987: 64). This species is endemic to the south west of Western Australia, where it grows in laterite soils in Jarrah forests. Over the majority of its range it consists of olive-green plants with sub-orbicular leaves, and red or orange-coloured petals. A summary of key features for different members of the complex is presented in Table 1 (below):

In this article I have provided a description of a distinctive member of the attractive *D. microphylla* complex. This taxon appears to possess characters that are unique in the complex: an overall red colouration to the plants, deeply cupped cauline leaves and white petals. At this stage the taxonomic status of this entity is not yet known, but the plants appear to form a coherent population, with consistent characters and grows apart from the other members of this complex. Further taxonomic study into this complex appears warranted, and would likely be most rewarding.

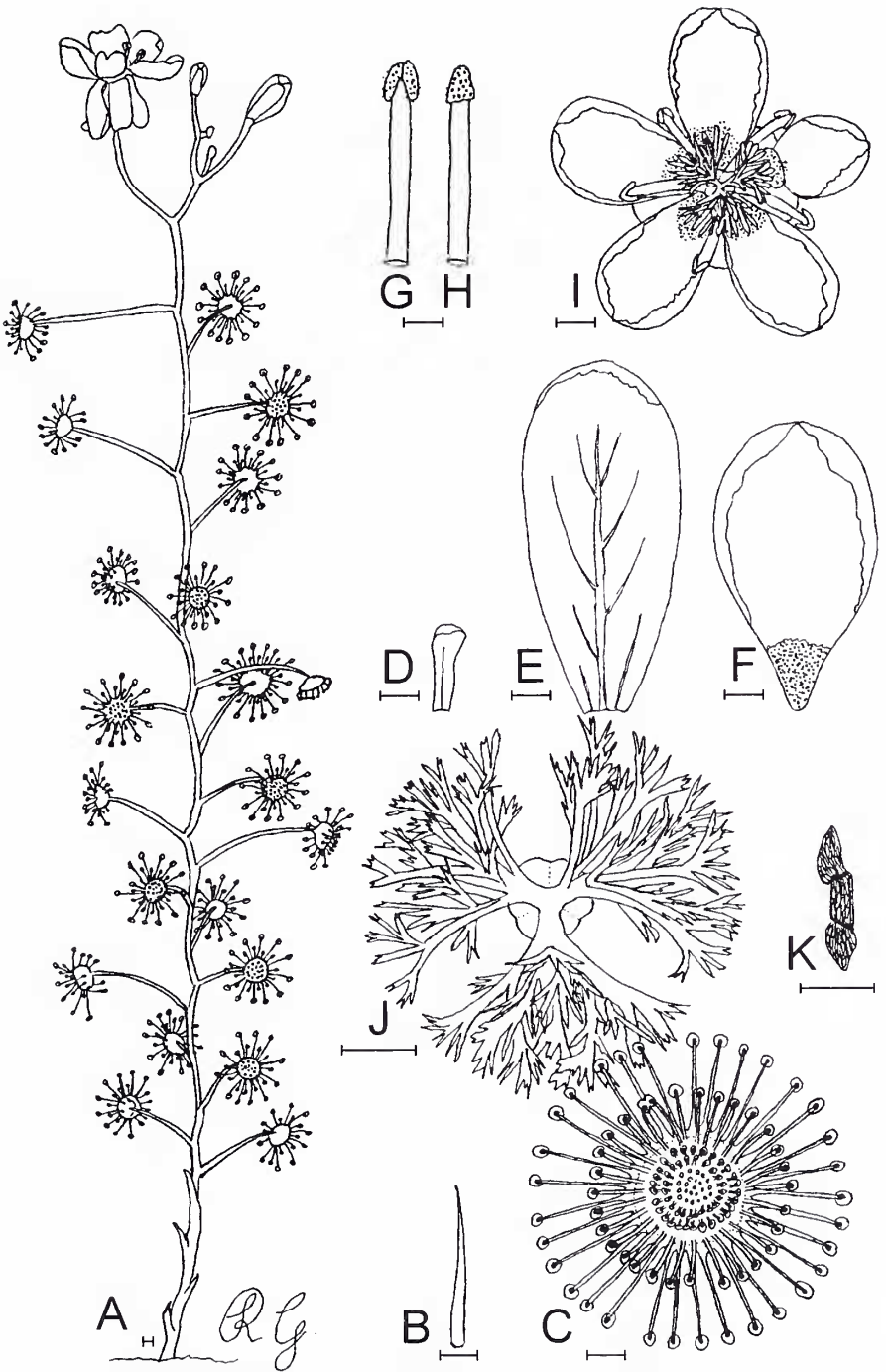


Figure 2. Botanical illustration, by R. Gibson, of the white-petalled taxon of *Drosera microphylla*. A: Whole plant in flower; B: prophyll; C: cauline leaf; D: bracteole; E: sepal; F: petal, with the red base indicated; G: stamen—adaxial view; H: stamen—abaxial view; I: open flower; J: gynoecium; K: mature seed. Scale bar in all cases is 1 mm.

	White-petalled plant	Diels 1906 var. <i>microphylla</i> ¹	Diels 1906 var. <i>macropetala</i> ¹	Lowrie 1987	Orange-petalled plant
Cauline leaf shape & diameter × depth	Orbicular 3 × 1.5-2	Suborbicular 1.5-3 × 1.5-3	Suborbicular 1.5-3 × 1.5-3	Reniform 3-3.5 × 1	Orbicular 2 × 1
Cauline leaf curvature	Deeply cupped	NA ²	NA ²	Shallowly cupped	Shallowly cupped
Petal colour	White to pale pink	Purple	Purple	Red	Orange
Sepal length × width (mm)	7-10 × 3.5-4	8-10 × 2.5	8-9 × 3-3.5	10 × 4	6-7 × 2
Petal length × width (mm)	6-8 × 3-7	6-8 × 3-4	9-10 × 5-9	8 × 5	7 × 3
Plant colour	Red	NA ²	NA ²	Green	Green
Geographic location	Esperance area	NA ²	NA ²	Perth area	Albany area

¹The taxon *D. microphylla* var. *macropetala* and the autonym *D. microphylla* var. *microphylla* were established in Diels (1906).

²This information is not provided in Diels (1906).

Table 1: A summary of variation recorded within the *Drosera microphylla* complex based on descriptions in Diels (1906; p. 119-121) and Lowrie (1987), and a comparison with plants from the Esperance and Albany areas. Plant colour is taken from sun-exposed plants.

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